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**EX PARTE**

April 30, 1998

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Ms. Magalie Roman Salas
Secretary - Federal Communications Commission
1919 M Street, N.W. Room 222
Washington, D.C. 20554

RE: CC Docket Nos. 96-45 and 97-160

DOCKET FILE COPY ORIGINAL

Dear Ms. Salas,

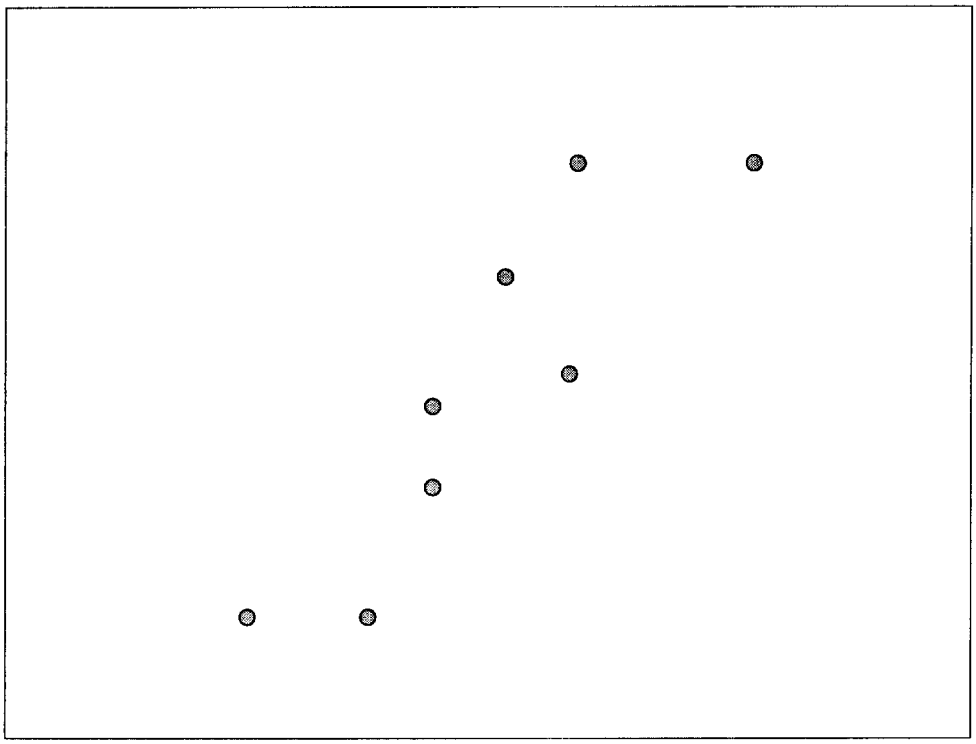
Today, I provided the attached materials in regard to the above referenced dockets to Brad Wimmer and Chuck Keller of the Universal Service Branch of the Common Carrier Bureau. The attached materials are related to a potential correction to the HAI model's current clustering methodology. This was suggested as part of an ex parte submitted by the HAI model sponsors on April 23, 1998. As shown in the attachment, the suggested HAI model "fix" would still result in a significant shortfall in the amount of distribution cable that would be needed to connect all of the customer locations in a cluster.

The original and three copies of this notice are being submitted to the Secretary of the FCC in accordance with Section 1.1206(b)(1) of the Commission's rules. If there are any questions, please call.

Sincerely,

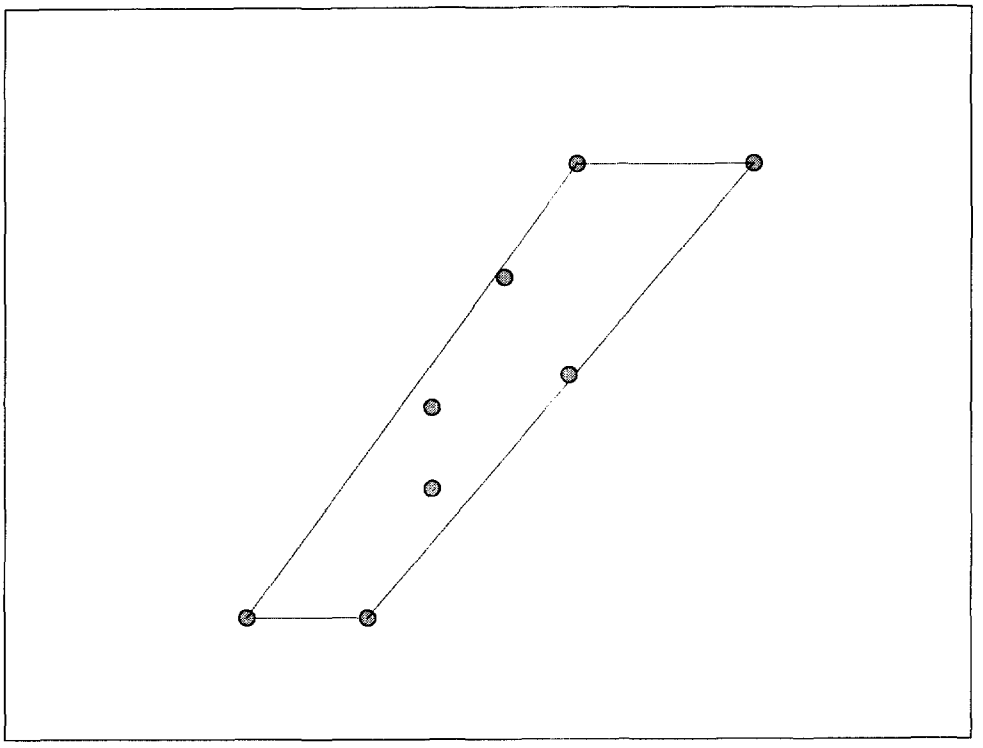
Pete Sywenki

cc: Chuck Keller
Brad Wimmer

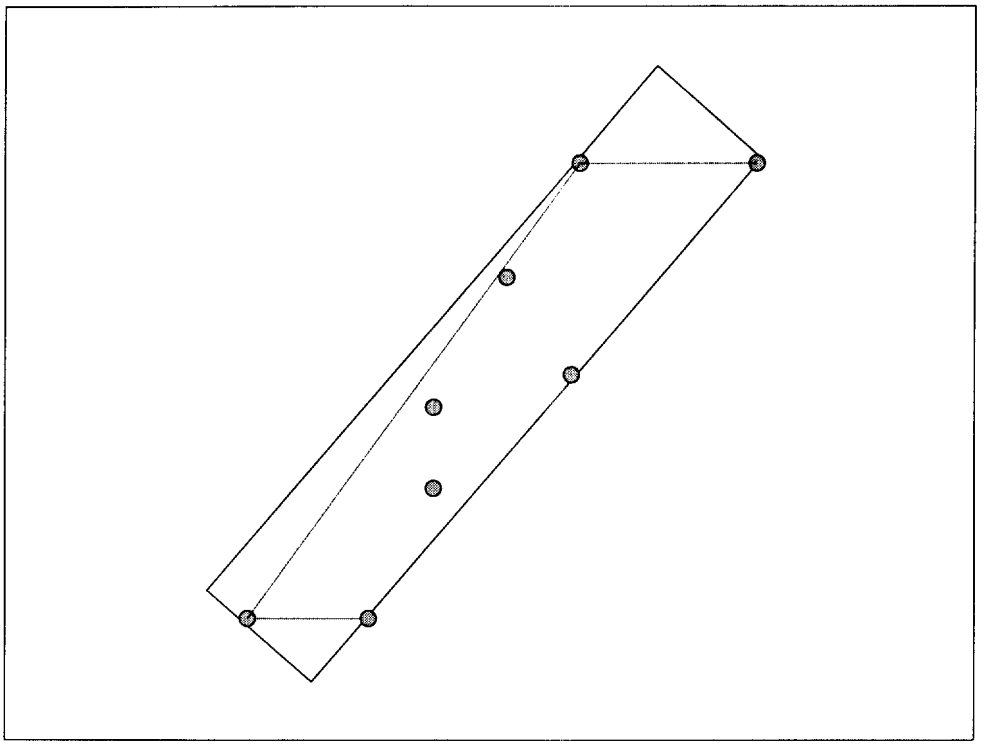


Original Points, representing customer locations: Either actual geocoded points or surrogate locations, or a combination of both.

These points will be grouped into one cluster according to PNR's clustering algorithm.



The convex hull containing the points on the previous page. The area of this polygon is converted to the rectangle.

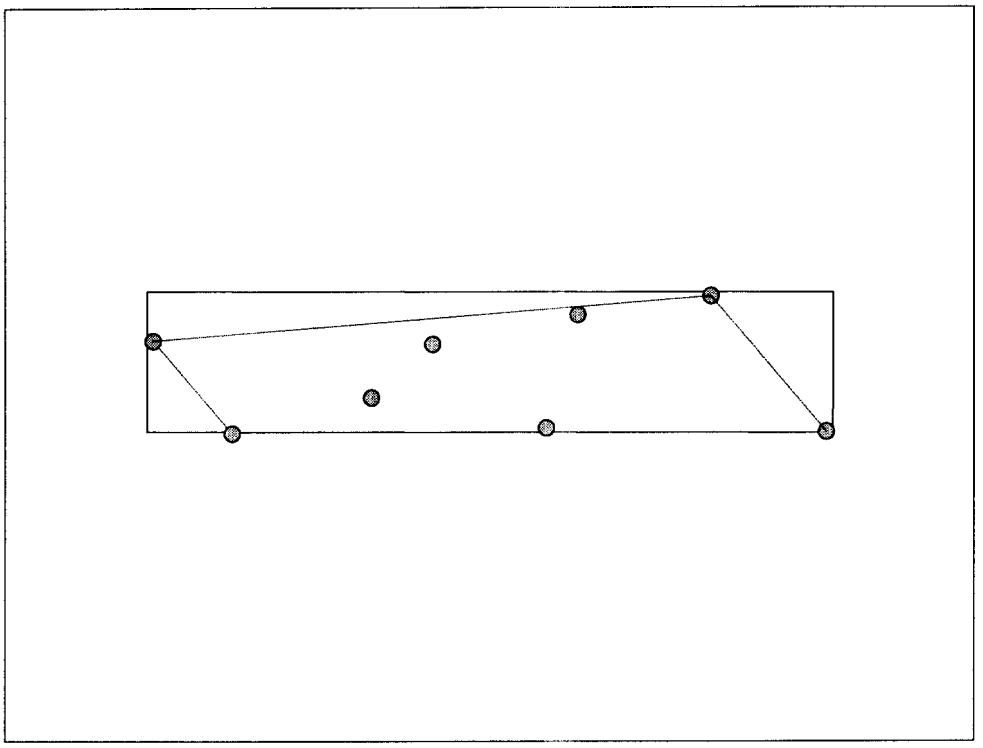


HAI Sponsor's Suggested "Fix"

Take the rectangle that actually surrounds the convex hull and maintain THAT aspect ratio (as follows). This is the "rotation" mentioned in the HAI Sponsor's ex parte of April 23, 1998.

This approach differs from the current method, which (for this particular set of points) would produce a more square-like minimum bounding rectangle.

For ease of explanation, we tilt the rectangle level in the following pictures.

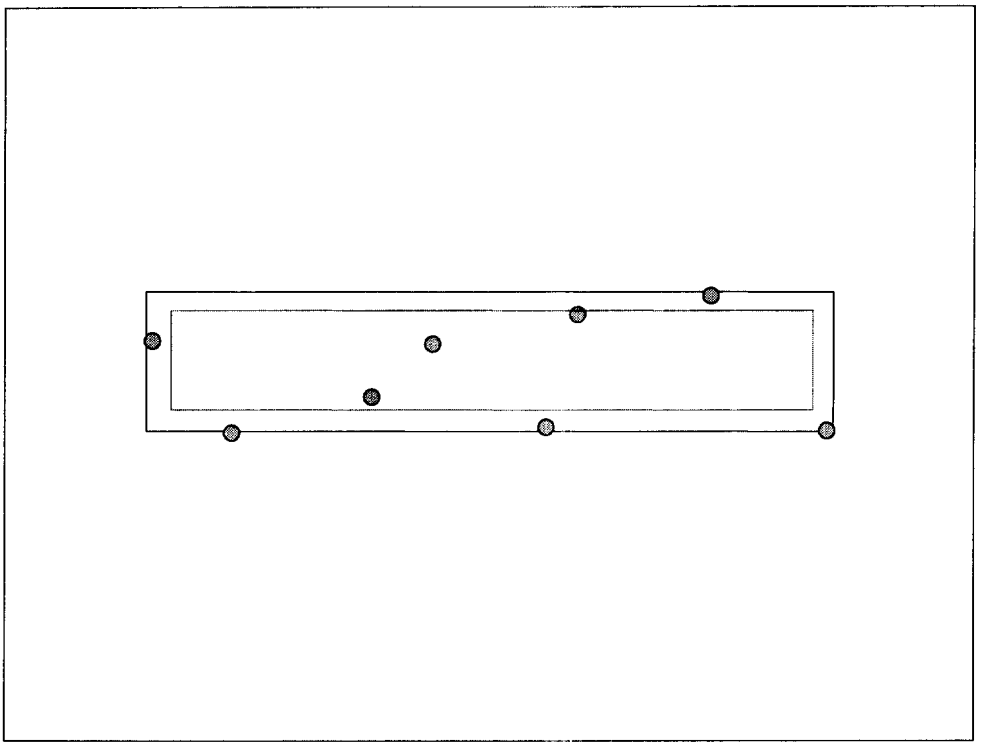


From this point there are two options:

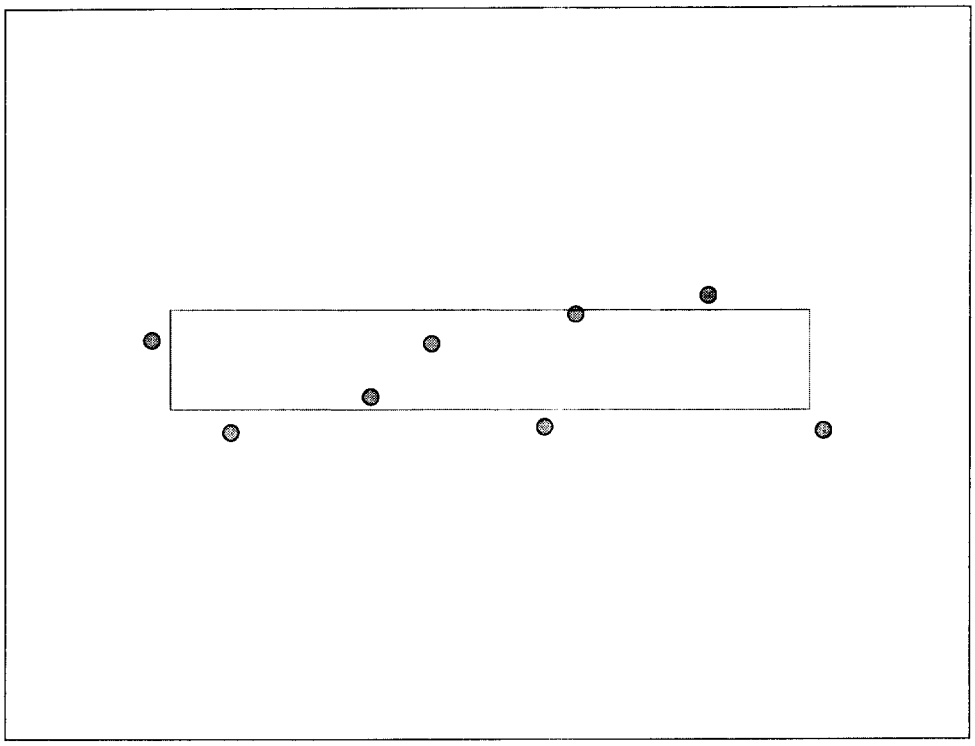
1) Maintain the area of the polygon using the aspect ratio of this surrounding rectangle. Build lots on that.

2) Maintain the area of this surrounding rectangle, build lots on that.

We produce option #1 first.

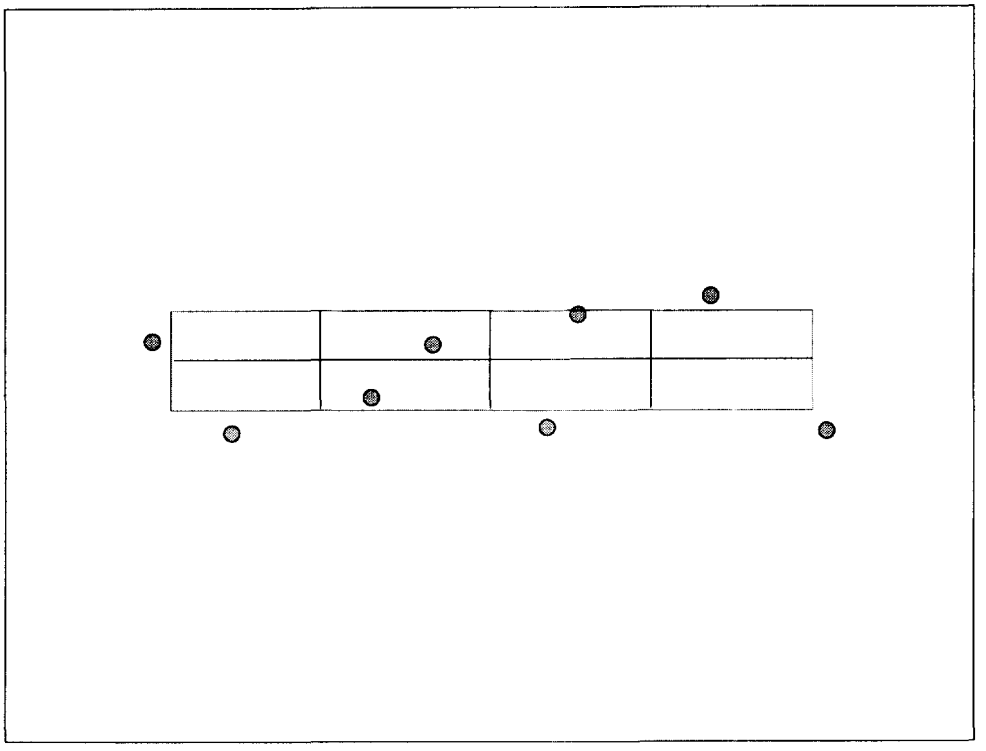


Smaller rectangle represents the area of the original polygon, converted to aspect ratio of the surrounding rectangle.



Polygon-converted-to-new-rectangle and original points.

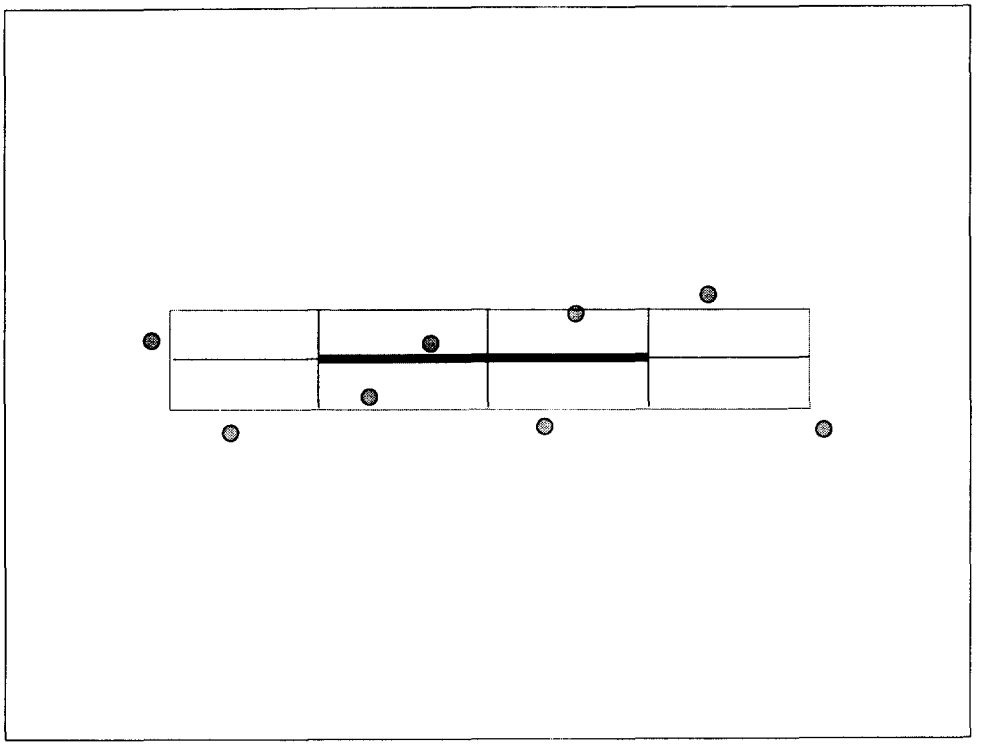
Already it is clear that the distance that must be covered between points is not encompassed in this area measure.



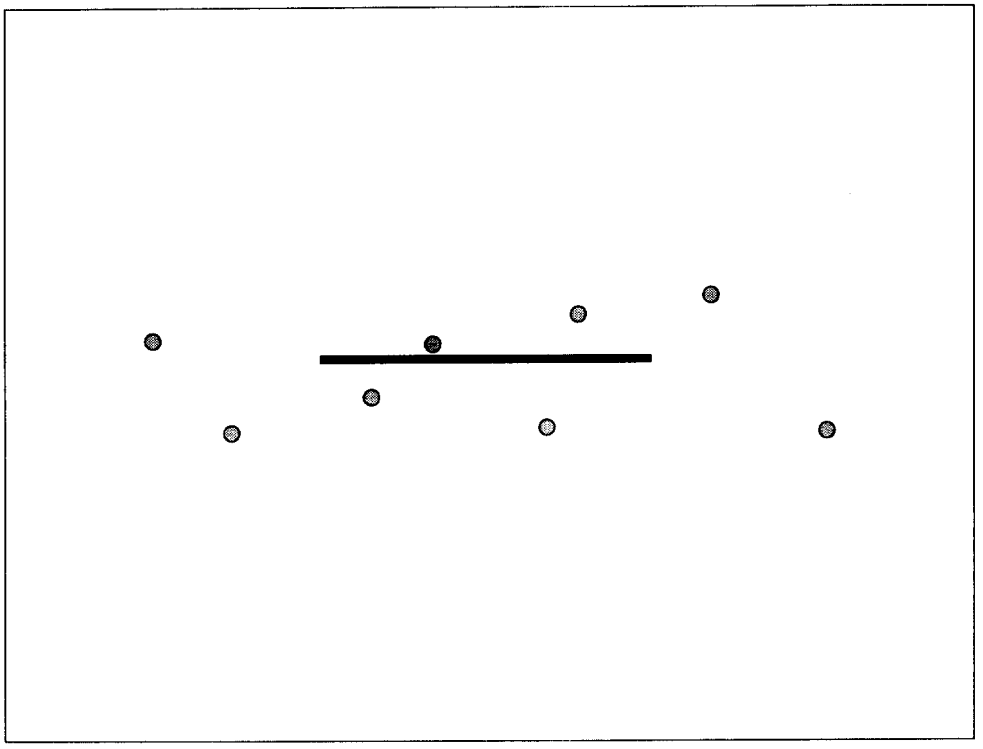
Converted area turned into lots, 8 lots for 8 customers.

Note: Lots are no longer exactly 2 X 1 (standard HAI 5.0a assumption). In maintaining the aspect ratio this no longer becomes possible.

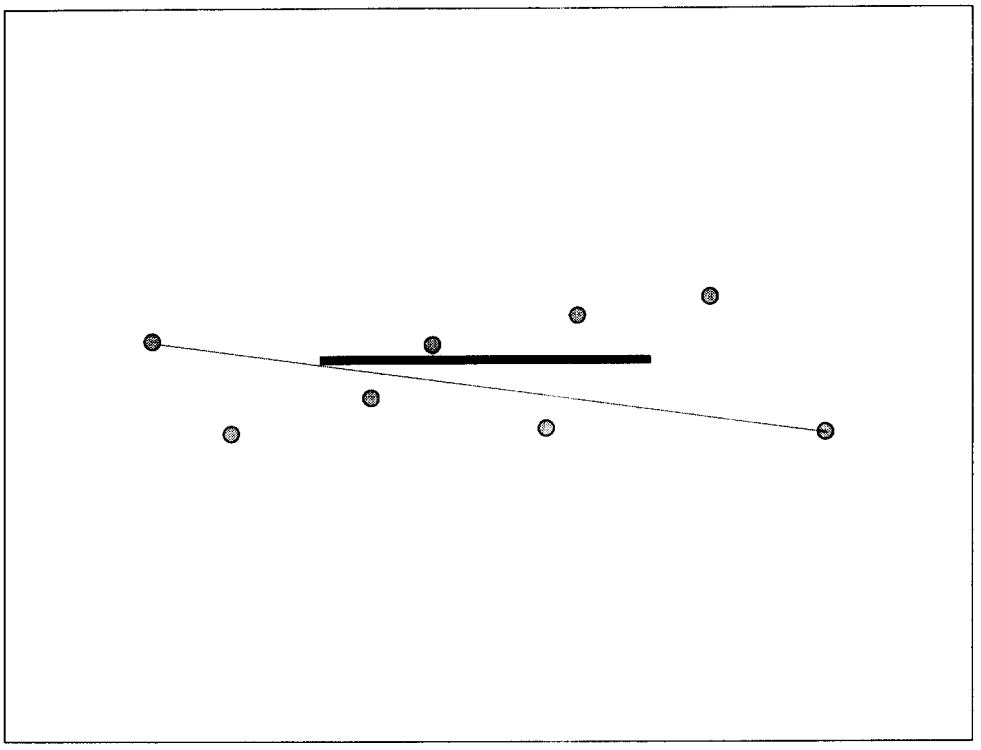
Feeder/distribution interface device will be placed at center of all 8 lots.



Red (or heavy) line represents total HAI distribution built to this cluster, even when rectangle is tilted and aspect ratio maintained.



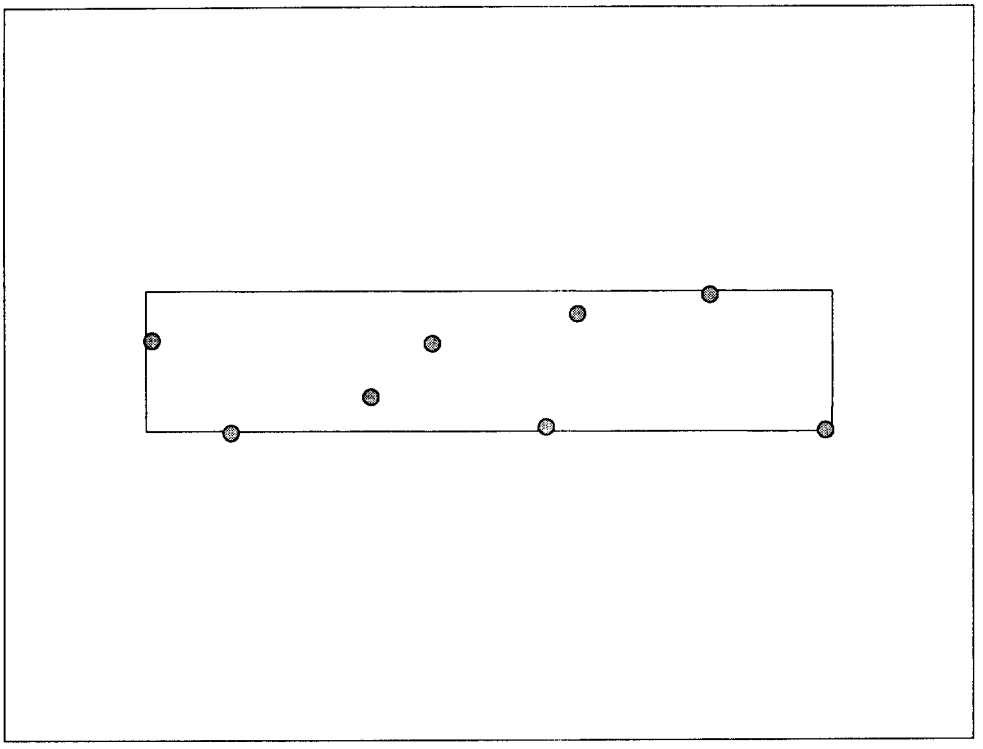
As picture shows, distribution falls dramatically short of distance required to connect customers where they are found.



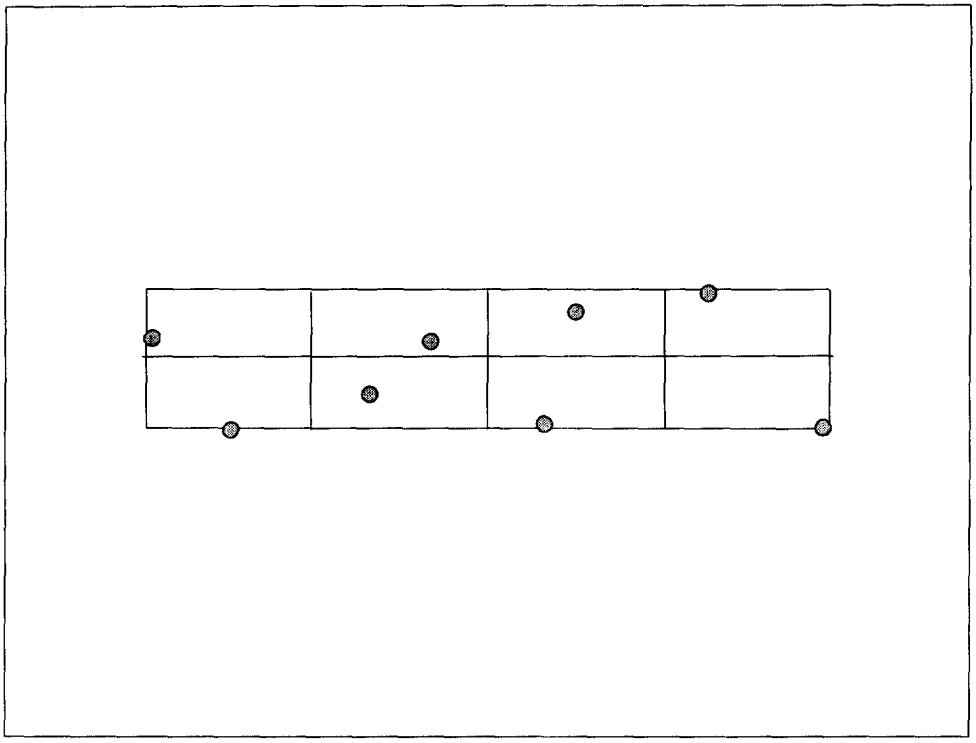
As picture shows, HAI distribution is dramatically short of even connecting the two customers that span the distance of the cluster.

This is the "diagonal" measure mentioned in Sprint's former ex parte.

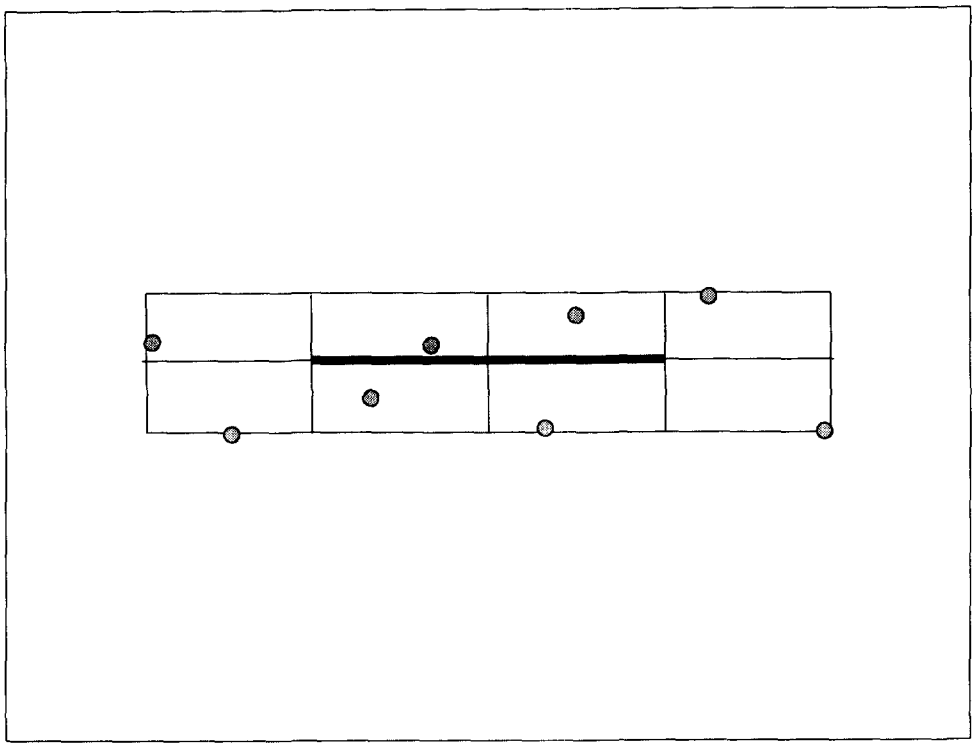
Now, option #2, maintaining the area of the tilted, bounding rectangle. (In most cases this will be larger than the area of the original polygon.)



Rectangle represents area of tilted minimum bounding rectangle, not area of convex hull of polygon.

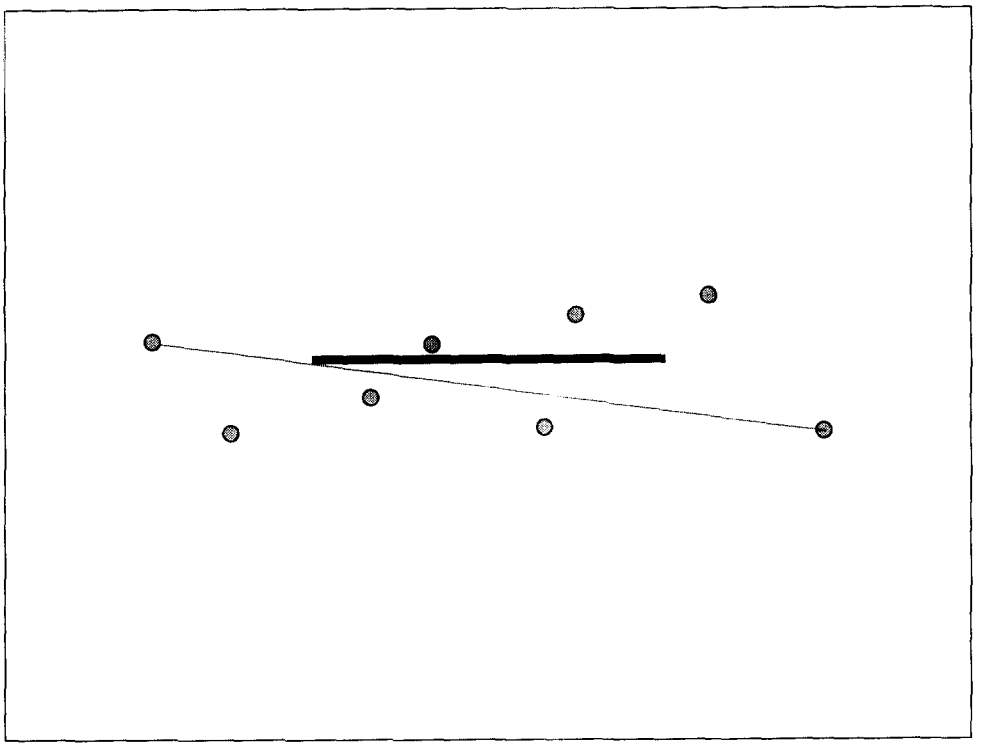


Lots placed over total rectangle area as before.



HAI Distribution cable built as before.

Key difference: Slightly larger lot size causes cable to be slightly longer than before.



Same effect: Cable falls far short of even the amount required to connect to farthest customers.

Important Notes:

1) There is NO offsetting effect.

2) As long as customer dispersion is condensed in any way, (such as converting polygons to rectangles or building cable only to the inside boundaries of perimeter lots), underestimation of required cable will occur.

3) "Distance between points", and not "area encompassed by points" must determine amount of cable built.